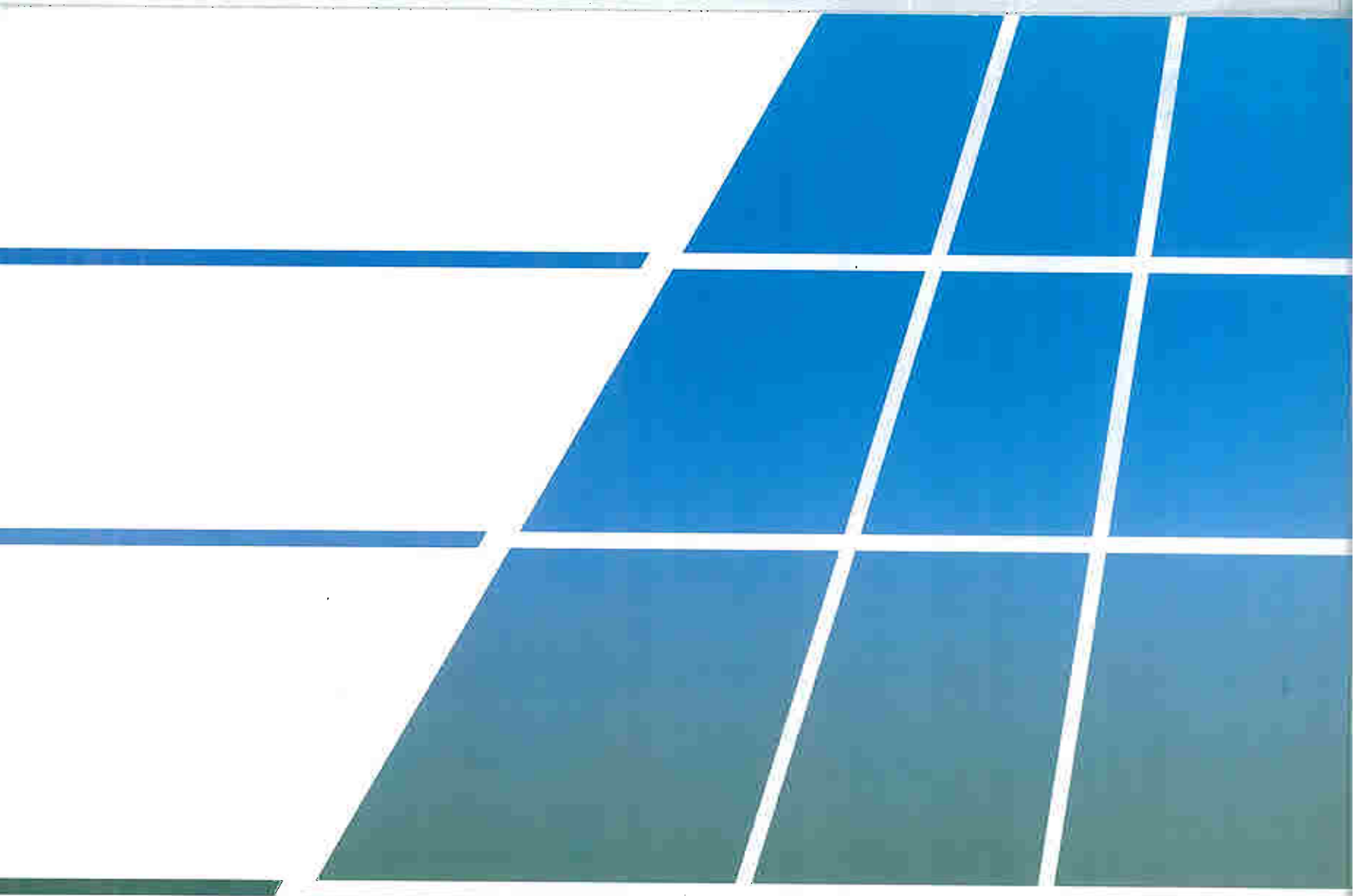

plug into our energy!



Sandia National Laboratories

Renewable Energy Office

We answer questions about

- reducing use of fossil fuels with renewable energy systems

We give a commitment to our customers to help from the beginning to the end of a project.

Renewable energy systems can be used with existing systems to reduce your gas and electric bills.

We offer to qualified users

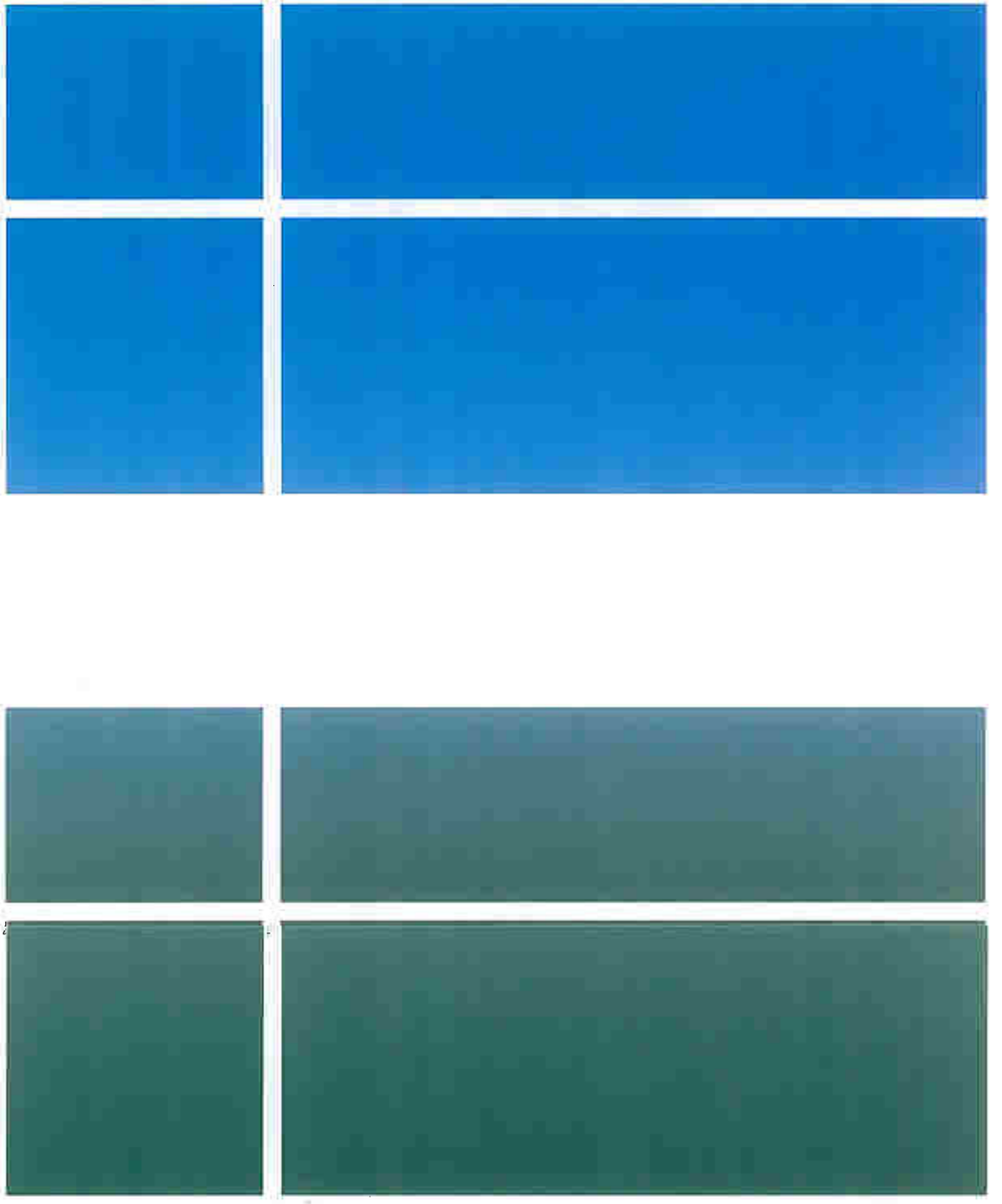
- an on-site assessment of your energy needs applicable to renewable energy systems
- help deciding whether renewable energy can work for your facility
- expert assistance in choosing renewable energy systems
- calculations of their economic payback
- technical recommendations
- advice during
  - design and procurement
  - construction
  - operation of the systems
  - monitoring operation
- analysis, testing, evaluation of systems
- training in renewable energy systems

Renewable energy systems can be used to provide

- electricity for grid applications
- electricity for remote installations where there is no utility grid
- hot water for facilities, such as hospitals and messes
- steam for industrial processes
- refrigeration and ice making, and heat for facilities and housing

Several kinds of systems can be combined to generate energy, such as a wind turbine and a photovoltaic array to provide electricity for a small facility.

Our staff coordinates with the renewable energy industry to assess an installation's energy needs and make suggestions on how renewable energy systems could be used to supply all or part of them.



Sandia's *Renewable Energy team* is a cross-technology group of engineers with primary focus on *solar thermal, photovoltaic, wind, and geothermal systems.*

We are an impartial source of technical advice and assistance. We do not sell products; we provide expert services. Our staff includes engineers, scientists, and technicians who work for the largest engineering laboratory in the nation. Our resources are backed by specialized facilities at Sandia, and to improve industry's products, we provide testing of prototype systems, components, and equipment in our facilities, many of which are unique.

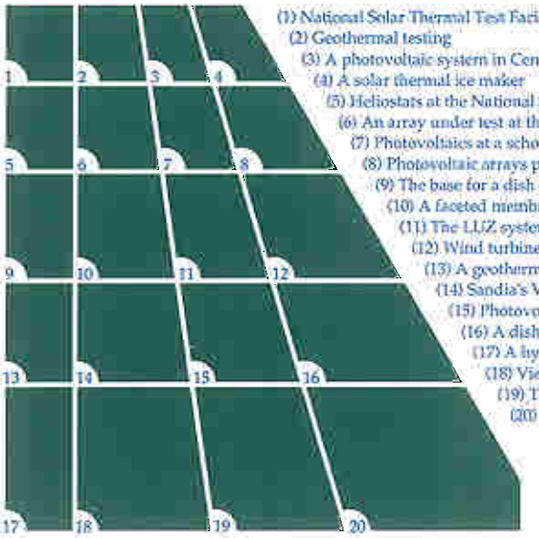
Our goal is to help energy users consider and properly implement the use of renewable energy technologies. We do this as an educational outreach and technology transfer service on behalf of the Department of Energy's investment in the development, commercialization, and deployment of renewable energy technologies. This effort is designed to complement, but not compete with, the technical services available through U.S. industry.

Sandia National Laboratories ✹ Renewable Energy Office ✹ plug into our energy!

renewable energy office — paul klimas — (505) 844-8159
photovoltaic systems — chris cameron—(505) 844-8161 solar thermal systems—dave menicucci—(505) 844-3077
geothermal systems — david glowaka — (505) 844-3601 wind systems — henry dodd — (505) 844-5253

Sandia is a multi-program laboratory operated by Martin Marietta Corporation for the Department of Energy. We have a history in renewable energy systems that goes back more than twenty years. We are pioneers in the field.

Technology transfer is a Department of Energy mission, and we take it seriously. We encourage cooperative cost-shared agreements with industry and enter into joint ventures and cooperative research and development agreements. Other kinds of arrangements are always possible, and we arrange outside use of our facilities.



(1) National Solar Thermal Test Facility
(2) Geothermal testing
(3) A photovoltaic system in Central America
(4) A solar thermal ice maker
(5) Heliostats at the National Solar Thermal Test Facility (NSTTF)
(6) An array under test at the Photovoltaic Systems Evaluation Laboratory
(7) Photovoltaics at a school crossing
(8) Photovoltaic arrays providing power from the roof of a building
(9) The base for a dish concentrator at the NSTTF
(10) A faceted membrane dish being tested at the NSTTF
(11) The LUZ system
(12) Wind turbines at a wind farm in California
(13) A geothermal well being drilled
(14) Sandia's Vertical Axis Wind Turbine Test Bed at Bushland, Texas
(15) Photovoltaic arrays provide power for water pumps in remote locations
(16) A dish concentrator at the NSTTF
(17) A hybrid renewable energy system being used on a farm for power
(18) View of the "power tower" and its field of mirrored concentrators at the NSTTF
(19) The control room at Sandia's Photovoltaic Device Measurement Laboratory
(20) A aerial view of the NSTTF